

**Date:** May 19, 2015

**To:** Thomas J. Bonfield, City Manager  
**Through:** W. Bowman Ferguson, Deputy City Manager  
**From:** Donald F. Greeley, Director, Water Management  
**Subject:** FY 2014 - Water Reclamation Facilities Improvements  
Engineering Services Contract – Amendment 2

**Executive Summary**

On June 6, 2014, City Council approved Contract 11758 with Hazen and Sawyer P.C. for professional engineering consulting services related to the Fiscal Year 2014 Water Reclamation Facilities (WRF) Improvements. The project consists of constructing improvements recommended in the 2012 Master Plans for the North Durham WRF (NDWRF) and the South Durham WRF (SDWRF). The improvements include wet weather treatment capacity improvements, replacement of aging and obsolete equipment and enhanced nutrient removal to achieve compliance with the Falls Lake Rules (NDWRF) and Jordan Lake Rules (SDWRF).

The first phase of engineering services provided under this contract consisted of preparing Preliminary Engineering Reports (PERs). Total cost for the PER's was \$1,149,290.00. These are now complete.

The facilities improvements will be constructed in two major phases. Because of the phased construction, the associated engineering services will be phased. This amendment is for the detailed design, permitting, and preparation of bid-ready documents for the Phase I construction projects; as well as 30% design for Phase II construction elements.

The engineering fees for this amendment are for a not-to-exceed amount of \$4,330,000.00. These funds are available in the current Capital Improvement Program (CIP) fund.

After finalizing the services provided by this Final Design amendment, subsequent amendments will be prepared that provide for Construction Related Services for Phase I construction; completion of Final Design for Phase II construction; and Construction Related Services for Phase II construction.

**Recommendation**

The Department of Water Management recommends that the City Council:

1. Authorize the City Manager to execute a second amendment to Agreement to Provide FY14 Engineering Services for North and South Durham Water Reclamation Facility Improvements between the City of Durham and Hazen and Sawyer, P.C. in the total amount not to exceed \$4,330,000.00 for a revised, total contract amount not to exceed \$5,577,599.00; and
2. Authorize increasing the contingency fund for the contract by \$433,000.00 for a total contract contingency of \$447,691.00 ; and

3. Authorize the City Manager to negotiate and execute amendments to the contract provided that the cost of all amendments together with the original contract cost does not exceed the total project cost of \$6,025,290.00.

### **Background**

On June 6, 2014, City Council approved Contract 11758 with Hazen and Sawyer P.C. (Engineer) for professional engineering consulting services related to the FY 2014 WRF Improvements project. The project consists of constructing improvements recommended in the 2012 Master Plans for the NDWRF and the SDWRF. The improvements include wet weather treatment capacity improvements, replacement of aging and obsolete equipment and enhanced nutrient removal to achieve compliance with the Falls Lake Rules at the NDWRF and Jordan Lake Rules at the SDWRF.

The City and Engineer agreed to a phased approach for contracting where Preliminary Engineering would occur first; then, as the detailed design scope became more defined, an amendment to the first contract for Final Design would be prepared. The City and Engineer also agreed to prepare a second amendment for Construction Related Services (construction observation and construction administration) once the final design is issued for bid.

The first phase of the contract, Preliminary Engineering, is now complete. During this phase, it was determined that it is to the City's advantage to construct the improvements in two major phases at both WRFs. The first major phase would start in FY16, the second in FY19.

It was also determined during Preliminary Engineering that an existing berm inside a Federal Emergency Management Agency (FEMA) floodplain at the NDWRF needed improvements before the low-lying area could be reclassified as "flood proof" in the eyes of FEMA. The flood-proof reclassification is needed in order to construct some of these new facilities. As such, Amendment #1 for Contract 11758 was approved in February 2015 to identify needed improvements, permitting and geotechnical services (the fees were within the contract's contingency).

### **Issues/Analysis**

Due to the phasing of construction elements, it is appropriate to similarly phase the remaining engineering services (Final Design and Construction Related Services). Thus, Amendment #2 is for the Final Design of Phase I construction elements; inclusive of detailed design, permitting, preparing bid documents, and providing bidding services. It also includes a 30% design effort for Phase II construction elements, most of which are affected by the upstream Phase I improvements.

The first phase of construction, starting in FY16, is estimated at roughly \$49.8M (Phase II construction estimate is \$11.3M). The engineering fees for this amendment are for a lump sum, not-to-exceed amount of \$4,330,000.00.

At the end of this design contract, an amendment will be prepared that provides for Construction Related Services for Phase I construction (Amendment #3), followed by an amendment for Final Design of Phase II projects (Amendment #4) and Construction Related Services for Phase II construction (Amendment #5).

### **Alternatives**

An alternative would be not proceeding with the current round of upgrades. This would endanger the City's ability to respond to increasing sewer demands and failure to meet stricter nutrient discharge limits at the plants which could ultimately lead to permit violations and fines.

#### **Financial Impacts**

Funding for Amendment #2 is available in the Wastewater Process Rehabilitation Project which is part of the City's Capital Improvement Program. The funds are currently available in the project accounts:

<b>Capital Project</b>	<b>Account Code</b>	<b>Amount</b>
Wastewater Process Rehabilitation	4100P002-731003-P251Z	\$ 4,330,000.00
Wastewater Process Rehabilitation	4100P002-731900-P251Z	\$ 433,000.00

Construction of these improvements is programmed into the proposed 5-Year Capital Improvement Program (CIP) plan, as well as in the current Rate Model.

#### **SDBE SUMMARY**

This is a contract amendment. Hazen and Sawyer, PC will be using the following SDBE firms for the additional scope of services:

<b>Firm</b>	<b>ID</b>	<b>City/State</b>	<b>Amount</b>	<b>% of Contract</b>
BREE & Associates, Inc.	MSDBE	Raleigh, NC	\$ 25,000	0.6%
A1 Consulting Group, Inc.	SDBE*	Morrisville, NC	\$ 25,000	0.6%
CH Engineering	WSDB E	Raleigh, NC	\$ 40,000	0.9%
Ellum Engineering	WSDB E	Fairview, NC	\$ 10,000	0.2%

\*A-1 Consulting Group, Inc. is an Asian American SDBE and was used for minority participation for this project in compliance with the Ordinance to Promote Equal Business Opportunities in City Contracting.